

CLAIMS

The invention claimed is:

- 5 1. A device comprising:
 - a network interface for coupling to a network; and
 - a processor coupled with the network interface, wherein the processor is adapted to
 - 10 establish a connection through the network for exchanging data packets that represent voice between the device and a corresponding device;
 - determine a round trip time for data packets being exchanged through the connection;
 - determine at least one performance parameter from transmitting a plurality of data packets along the connection; and
 - 15 determine a quality of service of the connection from the round trip time and the performance parameter.
2. The device of claim 1, wherein
 - the performance parameter is determined from a voice sample delay at a digital signal processing stage.
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 3. The device of claim 1, wherein
 - the performance parameter is determined from a voice sample loss at a digital signal processing stage.
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 4. The device of claim 1, wherein the processor is further adapted to:
 - determine a network connection impairment factor from the round trip time; and
 - determine a performance impairment factor from the performance parameter, wherein the quality of service is determined from the network connection impairment factor and the performance impairment factor.
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5. The device of claim 1, wherein
the quality of service is determined by adding together the network connection
impairment factor and the performance impairment factor.

5 6. The device of claim 1, wherein the processor is further adapted to:
determine an updated performance parameter from transmitting a plurality of
additional data packets; and
determine an updated quality of service of the connection from the updated
performance parameter.

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7. An article comprising: a storage medium, said storage medium having stored
thereon instructions, that, when executed by a first device, result in:
establishing a connection through a network for exchanging data packets that
represent voice between the first device and a second device;
15 determining a round trip time for data packets being exchanged through the
connection;
determining at least one performance parameter from transmitting a plurality of
data packets along the connection; and
determining a quality of service of the connection from the round trip time and the
20 performance parameter.

8. The article of claim 7, wherein
the performance parameter is determined from a voice sample delay at a digital
signal processing stage.

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9. The article of claim 7, wherein
the performance parameter is determined from a sample loss at a digital signal
processing stage.

30 10. The article of claim 7, wherein the instructions further result in:

determining a network connection impairment factor from the round trip time;
and

determining a performance impairment factor from the performance parameter,
wherein the quality of service is determined from the network connection

5 impairment factor and the performance impairment factor.

11. The article of claim 7, wherein

the quality of service is determined by adding together the network connection
impairment factor and the performance impairment factor.

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12. The article of claim 7, wherein the instructions further result in:

determining an updated performance parameter from transmitting a plurality of
additional data packets; and

determining an updated quality of service of the connection from the updated

15 performance parameter.

13. A device comprising:

means for coupling to a network;

means for establishing a connection through the network for exchanging data

20 packets that represent voice between the device and a corresponding device;

means for determining a round trip time for data packets being exchanged through
the connection;

means for determining at least one performance parameter from transmitting a
plurality of data packets along the connection; and

25 means for determining a quality of service of the connection from the round trip
time and the performance parameter.

14. The device of claim 13, wherein

the performance parameter is determined from a voice sample delay at a digital

30 signal processing stage.

15. The device of claim 13, wherein
the performance parameter is determined from a voice sample loss at a digital
signal processing stage.

5 16. The device of claim 13, further comprising:
means for determining a network connection impairment factor from the round
trip time; and
means for determining a performance impairment factor from the performance
parameter,
10 wherein the quality of service is determined from the network connection
impairment factor and the performance impairment factor.

15 17. The device of claim 13, wherein
the quality of service is determined by adding together the network connection
impairment factor and the performance impairment factor.

20 18. The device of claim 13, further comprising:
means for determining an updated performance parameter from transmitting a
plurality of additional data packets; and
means for determining an updated quality of service of the connection from the
updated performance parameter.

25 19. A method comprising:
establishing a connection through a network for exchanging data packets that
represent voice between a first device and a second device;
determining a round trip time for data packets being exchanged through the
connection;
transmitting a plurality of the data packets along the connection;
determining at least one performance parameter from transmitting the data
30 packets; and

determining a quality of service of the connection from the round trip time and the performance parameter.

20. The method of claim 19, wherein:

5 the performance parameter is determined from a voice sample delay at a digital signal processing stage.

21. The method of claim 19, wherein:

the performance parameter is determined from a voice sample loss at a digital

10 signal processing stage.

22. The method of claim 19, further comprising:

determining a network connection impairment factor from the round trip time;
and

15 determining a performance impairment factor from the performance parameter,
wherein the quality of service is determined from the network connection
impairment factor and the performance impairment factor.

23. The method of claim 19, wherein:

20 the quality of service is determined by adding together the network connection
impairment factor and the performance impairment factor.

24. The method of claim 19, further comprising:

transmitting additional data packets;

25 determining an updated performance parameter from transmitting the additional
data packets; and

determining an updated quality of service of the connection from the updated
performance parameter.